

**ADAPTIVE KNOWLEDGE MANAGEMENT SYSTEM FOR VEHICLE TREND
MONITORING, HEALTH MANAGEMENT AND PREVENTIVE MAINTENANCE**

ABSTRACT OF THE INVENTION

- 5 **[0028]** A method and an Adaptive Knowledge Management is provided. The
Adaptive Knowledge Management System is used for assisting a user with
decision making by providing real-time, on-line automated recommendations for
actions in a monitored vehicle troubleshooting, performance trend monitoring,
health management and preemptive maintenance domain diagnostics and
10 prognostics. The system creates a Structured Knowledge Repository,
constructed from models, historical data, and heuristics for organizing a model
domain knowledge. It uses a plurality of Analytical and Machine Learning tools
for capturing knowledge from data sources and populating cells of the
Structured Knowledge Repository. A Mixed-Initiative Planning module is used
15 for interpreting operation goals for the monitored vehicle and utilizing the
Structure Knowledge Repository for developing recommendations for user
decision making. A plurality of Mixed-initiative Decision Support tools use the
feedback from the Mixed-Initiative Planning module and query the Structured
Knowledge Repository for incorporating the extracted knowledge and
20 information into outputs dealing with current issues and contingencies.